

.menu..

HISTORY
PHILOSOPHY
FOUNDATIONS
ANTHOLOGY
ARCHIVES
BOOKS
CONFERENCES
DIDACTICS
DIDATTICA
PEOPLE
PICTURES
LINKS
MAILTO
NEWS

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Anthology of Italian Physics (1855-1944)

Righi Augusto (1850 - 1920)



Papers on line:

[A. Righi, Ricerche sull'azione della magnete e degli agenti termici nella ipnosi isterica; nota di Augusto Righi, Il Nuovo Cimento, 17 \(1885\), 11-15.](#)

[A. Righi, Sulla velocità dei raggi polarizzati circolarmente nell'interno di un corpo dotato di potere rotatorio; memoria del prof. Augusto Righi, Il Nuovo Cimento, 18 \(1885\), 156-161.](#)

[A. Righi, Sulla ipotesi della doppia rifrazione circolare, Il Nuovo Cimento, 21 \(1887\), 36-54.](#)

[A. Righi, Di alcuni nuovi fenomeni provocati dalle radiazioni; nota del prof. Augusto Righi, Il Nuovo Cimento, 23 \(1888\), 61-64.](#)

[A. Righi, Sui fenomeni elettrici provocati dalle radiazioni; memorie del prof. Augusto Righi, Il Nuovo Cimento, 24 \(1888\), 256-260.](#)

[Osservazioni ad una affermazione di priorità del prof. A. Righi, Dott. W. Hallwachs, Il Nuovo Cimento, 28 \(1890\), 59-62.](#)

[A. Righi, Risposta alle osservazioni del Sig. Hallwachs; A. Righi, Il Nuovo Cimento, 28 \(1890\), 62-63.](#)

[A. Righi, Le onde hertziane del prof. A. Righi, Largo sunto della relazione presentata al Congresso internazionale di fisica di Parigi nel 1900, Il Nuovo Cimento, 1 \(1901\), 50-68.](#)

[A. Righi, Sulle basi sperimentali della teoria della relatività, memoria di A. Righi, Il Nuovo Cimento, 19 \(1920\), 141-162.](#)

P. Cardani, In memoria di Augusto Righi, Il Nuovo Cimento, 21 (1921), 53-186:

[- Part I](#)

[- Part II](#)

[- Part III](#)

[- Part IV](#)

[- Part V](#)

[- Part VI](#)

[- Part VII](#)

**Papers in Il Nuovo Cimento:
[papers by Augusto Righi](#)**

Augusto Righi was born in Bologna on August, 27, 1850.

He took the degree in engineering at the age of 22.

He has been:

- Student at the Technical School of Bologna (1861-67)
- Physics Teacher at the Technical Institute of Bologna (from 1873 to October 1880)
- Professor at the University of Palermo (1880)
- Professor of Physics at the University of Padua (from November 1885 to 1889)
- Member of various International Academies (see list in Cardani's **commemoration**, pages 155-157)
- Member of the Academy of Lincei (1898)
- Professor of Physics at the Faculty of Science in Bologna on 1899 where he taught for 32 years
- "Doctor honoris causa" of the Georgian Academy (1899)
- Member of the Physical Society of London (1903)
- Senator of the Reign (1905)

Righi died in Bologna on June, 8, 1920.

Researches:

According to Pietro Cardani, author of Righi's commemoration in "Il Nuovo Cimento", Righi wrote 242 papers.

Among them, Cardani stresses the importance of:

- an analytical paper on the composition of vibrational motions described by Lissajous (1873)
- a group of papers on Volta effect (from 1874 to 1887)
- a work on physiological optics (1875)
- a series of memories on stereoscopic vision (from 1875 to 1892)
- three memories on electric discharge in gases at atmospheric pressure (from 1876 to 1886)
- papers on theories of capacitors and induction machines (1879)
- a memory on magnetisation of steel (1880)
- two memories on electric shadows (1881-82)
- two memories on Kerr effect (starting from 1884)
- a memoire on double circular refraction (1886)
- an experimental paper on reflection of light (1886)
- a memoire on the interference theory of light (1887)
- nine memories on photoelectric effect (1888-89)
- two memories on electromagnetic and electrodynamic forces (1889-1890)
- a series of memories on electric sparks (1891-92-95)
- a paper which contains the description of a new instrument for interference of sound waves (1892)
- a classical textbook of the Electromagnetism entitled "Optics of the electrical oscillations" (L'Ottica delle oscillazioni elettriche) (1897)
- a paper on the Zeeman effect (1898)
- two notes on an experimental method for the study of absorption of light in a magnetic field (1898)
- a paper on wireless telegraphy entitled "The wireless Telegraphy " (La Telegrafia senza fili) (1903)
- a series of memories on researches with radio-active substances (1905-06)
- a paper on the electromagnetic mass of the electron (1906)
- a paper on movement in an electromagnetic field of a system electron-positive ion (1910)
- a book on "Electro-atomic phenomena in magnetic field" (I fenomeni elettroatomici sotto l'influenza del magnetismo) (1918)
- a series of memories on Relativity (starting from 1919)

In "Il Nuovo Cimento" Righi wrote 130 papers; among them:

- 24 on Electromagnetism
- 18 on Electricity
- 13 on Optics
- 8 on Cathode rays
- 4 on X rays
- 5 on Zeeman Effect
- 6 on Photoelectric Effect

Righi is mainly remembered for his studies on electromagnetic waves.

At the University of Palermo he was among the first scholars to study the hysteresis effect of iron and other magnetic materials (1880); his contributions to the study of Hall and Kerr effects brought to light some basic aspects that have been later explained by the electronic theory.

Righi had a clear understanding that in order to make progress in the analogy

between electrical and light vibrations it was necessary to use apparatus capable of generating wavelengths shorter than those used by Hertz.

Using his "sphere oscillator" he carried out a series of experiments which proved Maxwell's theory to be correct.

This work was of fundamental importance in the training of the young Guglielmo Marconi, who carried out his early research in Righi's laboratory (see [here](#)).

During the last years of his life he began experiments on the conduction of gases under various conditions of pressure and ionization in magnetic field.

From 1918 he concentrated on the Michelson-Morley experiment, criticizing it and suggesting modifications.

He was fascinated by the theory of relativity, though he believed that the theory lacked convincing experimental support.

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[Link to another page on Righi](#)



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